Claims

What is claimed is:

1. A method for performing optimal power control of an optical disk drive based on a beta-parameter for determining whether a default power is equal to an optimal write-in power for writing data onto an optical disk, the method comprising:

reading a write-in data from the optical disk and generating a corresponding read result after the write-in data is written onto the optical disk with the default power;

setting a first level and a second level, wherein the first level is higher than the second level; and

processing an evaluation step according to a portion of the read result whose level is higher than the first level and lower than the second level for accumulating the beta-parameter.

2. The method of claim 1 wherein when processing the evaluation step, accumulating the beta-parameter is not according to the portion of the read result whose levels are between the first level and the second level.

3. The method of claim 1 further comprising: high-pass filtering the read result before processing the evaluation step so that the evaluation step is according to the filtered read result.

4. The method of claim 1 further comprising:

generating a first sliced signal according to the first level, wherein a portion of the first sliced signal belonging to a first digital level corresponds to a portion of the read result whose level is higher than the first level, and a portion of the first sliced signal belonging to a second digital level corresponds to a portion of the read result whose level is lower than the first level; and

increasing the beta-parameter when the first sliced signal maintains the first digital level, and stopping increasing the beta-parameter when

the first sliced signal maintains the second digital level.

5. The method of claim 1 wherein processing the evaluation step further comprises:

generating a second sliced signal according to the second level, wherein a portion of the second sliced signal belonging to the first digital level corresponds to a portion of the read result whose level is lower than the second level, and a portion of the second sliced signal belonging to the second digital level corresponds to a portion of the read result whose level is higher than the second level; and

increasing the beta-parameter when the second sliced signal maintains the first digital level, and stopping decreasing the beta-parameter when the second sliced signal maintains the second digital level.

6. The method of claim 1 wherein the write-in data comprises at least a first data sequence and at least a second data sequence, and the read result comprises a first read sub-result and a second read sub-result corresponding to the first data sequence and the second data sequence respectively, the amplitude of the first read sub-result being larger than that of the second read sub-result.

7. The method of claim 6 wherein the first level is higher than the highest level of the second read sub-result and lower than the highest level of the first read sub-result.

8. The method of claim 6 wherein the second level is lower than the lowest level of the second read sub-result and higher than the lowest level of the second read sub-result.

9. The method of claim 6 wherein the first data sequence comprises at least a first stream, each first stream comprising a predetermined number of bits of data with the same content, the second data sequence comprises at least a second stream, each second stream comprising a predetermined number of bits of data with the same content, the number of the bits of data in the first stream being larger than

that in the second stream.

10. An optical disk drive comprising:

an access circuit for writing a write-in data onto an optical disk with a default power, the access circuit capable of reading the written write-in data on the optical disk and generating a corresponding read result;

an evaluation module electrically connected to the access circuit comprising:

a first slicer for detecting a portion of the read result higher than a first level; and

a second slicer for detecting a portion of the read result lower than a second level;

wherein the first level is higher than the second level; and the evaluation module accumulates a beta-parameter according to the detected results of the first slicer and the second slicer; and

a control module electrically connected to the evaluation module for controlling operation of the optical disk drive, the control module capable of determining if the default write-in power is the preferred power according to the beta-parameter.

11. The optical disk drive of claim 10 wherein the evaluation module stops accumulating the beta-parameter according to a portion of the read result ranging between the first level and the second level.

12. The optical disk drive of claim 10 further comprising a high-pass filter between the access circuit and the evaluation module for high-pass filtering the read result and transmitting the filtered read result to the evaluation module.

13. The optical disk drive of claim 10 wherein the evaluation module further comprises a storage unit electrically connected to the first slicer and the second slicer for storing the beta-parameter.

14. The optical disk drive of claim 13 wherein the first slicer generates a first sliced signal according to the first level, so that a portion of the first sliced signal belonging to a first digital level corresponds to a portion of the read result whose level is higher than the first level, and a portion of the first sliced signal belonging to a second digital level corresponds to a portion of the read result whose level is lower than the first level, the evaluation module further comprising:

a charger, electrically connected between the first slicer and the storage unit, for increasing the beta-parameter when the first sliced signal maintains the first digital level, and stopping decreasing the beta-parameter when the first sliced signal maintains the second digital level.

15. The optical disk drive of claim 13 wherein the second slicer generates a second sliced signal according to the second level so that a portion of the second sliced signal belonging to a first digital level corresponds to a portion of the read result whose level is lower than the second level, and a portion of the second sliced signal belonging to a second digital level corresponds to a portion of the read result whose level is lower than the second level, the evaluation module further comprising:

a discharger, electrically connected between the second slicer and the storage unit, for decreasing the beta-parameter when the second sliced signal maintains the first digital level, and stopping decreasing the beta-parameter when the second sliced signal maintains the second digital level.

16. The optical disk drive of claim 10 wherein the write-in data comprises at least a first data sequence and at least a second data sequence, the read result comprising a first read sub-result and a second read sub-result corresponding to the first data sequence and the second data sequence respectively, the amplitude of the first read sub-result being larger than that of the second read sub-result.

17. The optical disk drive of claim 16 wherein the first level is higher than the

highest level of the second read sub-result and lower than the highest level of the first read sub-result.

18. The optical disk drive of claim 16 wherein the second level is lower than the lowest level of the second read sub-result and higher than the lowest level of the second read sub-result.

19. The optical disk drive of claim 16 wherein the first data sequence comprises at least a first stream, each first stream comprising a predetermined number of bits of data with the same content, the second data sequence comprises at least a second stream, each second stream comprising a predetermined number of bits of data with the same content, the number of the bits of data in the first stream being larger than that in the second stream.